IFKAD
www.ifkad.org

**IFKAD 2025
2-4 JULY 2025
NAPLES, ITALY**

CALL FOR ABSTRACTS – IFKAD 2025

Special Track n.: 35

Thematic Area: AI and Circular Economy

Accelerating the Shift to a Circular Economy Through Digital Technologies and Knowledge Management

Description

Global concerns about climate change, resource depletion, and waste generation have led to the recognition that sustainable development models must replace traditional production and consumption systems based on the "take-make-dispose" *(Su et al., 2013; Esposito et al., 2020)*. In this context, the circular economic (CE) model, based on principles of reuse, recycling, and reduction, has emerged as a widely recognised approach able to reduce carbon emissions, mitigate climate change, to optimize resource use, minimize waste, and foster environmental sustainability (*Merli et al., 2017; Zhang et al., 2018; Wang, 2018*).

In this scenario, companies play a pivotal role in driving the transition towards a CE. Indeed, firms have understood that integrating circular principles into business operations can improve resource efficiency, reduce costs, and enhance competitiveness *(Ge & Jackson, 2014)*. However, to successfully shift towards circular production and consumption patterns, systemic change across industries is required *(Domenech et al., 2019; Cecchin et al., 2020)*. Companies must redesign processes, adopt sustainable materials, and reimagine products and services through the lens of circularity also activating symbiotic mechanisms to share resources, materials and to create shared value and long-term sustainable growth *(Notarnicola et al., 2016; Ritzén & Sandström, 2017; Salomone et al., 2020; Oughton et al., 2022)*.

Despite the clear benefits of this symbiotic approach, companies face numerous challenges in successfully shifting towards CE. One of the primary barriers is the complexity of redesigning traditional linear processes into closed-loop systems *(Su et al., 2013)*. This shift involves overcoming entrenched organizational practices, legacy technologies, and supply chain structures. Additionally, many companies lack the expertise, resources, and knowledge to implement circular strategies effectively *(Chu et al., 2018)*. Furthermore, information asymmetry represents another significant challenge. Indeed, to activate these symbiotic and circular exchanges, companies are called to ensure transparency and accuracy in data collection and dissemination in order to make informed decisions *(Piscicelli, 2023)*. Moreover, without the proper tools and frameworks to assess sustainability metrics and circular performance, companies struggle to quantify the benefits of circular practices and communicate these effectively to stakeholders (Wang et al., 2019).

UNIVERSITÀ DEGLI STUDI DI NAPOLI **FEDERICO II** ARTS FOR BUSINESS INSTITUTE UNIVERSITÀ **LUM** GIUSEPPE DEGENNARO

In order to address these barriers, firms should invest in knowledge management (KM) systems that support the acquisition of skills and capabilities essential for the CE transition *(Ritzén & Sandström, 2017)*. Effective KM frameworks facilitate knowledge and expertise sharing, enabling businesses to design and implement circular strategies, optimize processes, and measure sustainability outcomes *(Valkokari, 2015; Ul-Durar et al., 2023)*. In this evolving landscape, digital technologies (DT) emerge as catalysts that augment KM processes by enabling the efficient collection, analysis, and dissemination of knowledge. These technologies extend the potential of KM by automating knowledge sharing, enhancing decision-making, and fostering collaboration in real-time, irrespective of geographical constraints *(Andreeva & Kianto, 2012)*. For instance, Big Data analytics, Internet of Things (IoT), artificial intelligence (AI), and blockchain systems streamline KM and provide deeper insights into resource flows, waste reduction opportunities, and lifecycle analysis-all key components of CE strategies *(Bocken et al., 2016)*. Furthermore, DT are transforming how companies approach CE by providing real-time insights into resource flows, product lifecycles, and environmental impacts *(Gupta et al., 2019)*. More in detail, blockchain technologies could ensure traceability and authenticity in supply chains, which is critical for verifying circular practices and reducing information asymmetry *(Piscicelli, 2023)*. Similarly, IoT devices and smart sensors collect vast amounts of data related to production processes, resource use, and environmental performance, helping businesses optimize operations and minimize waste *(Sica et al., 2023)*. Additionally, online platforms and collaborative networks offer opportunities for businesses to share best practices, innovations, and CE insights across industries *(Zhang et al., 2020)*.

Furthermore, the adoption of DT is also relevant for the diffusion of CE information, such as performance metrics and sustainability achievements and is equally vital for fostering accountability and encouraging broader adoption of circular practices *(Aryal et al., 2018)*. In this regard, KM systems are essential for overcoming the information gaps that hinder the full potential of circular strategies *(Xiang & Yuan, 2024)*. Indeed, DT could also enhance transparency in sustainability disclosures by supporting the accurate and reliable dissemination of CE information to stakeholders. As companies adopt digital platforms to disclose their environmental and social impacts, DTs play a key role in aligning corporate strategies with stakeholder expectations *(Gupta et al., 2019; Esposito et al., 2023; L'Abate et al., 2023)*.
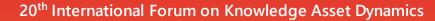
In this context, DT are not just tools but strategic enablers that transform how knowledge is harnessed and applied, driving innovation and fostering sustainable business models within circular systems *(Geissdoerfer et al., 2017; Pagoropoulos et al., 2017)*.

Given the significance of DT for the CE transition, scholars have started to investigate their potential across various domains. Some studies have focused on the role of DT in optimizing resource efficiency *(e.g., Zhang et al., 2020; Rodrigo et al., 2024; Sánchez-García et al., 2024)*, enhancing inter-organisational collaborations *(e.g., Schöggl et al., 2024)* and firm performance *(e.g.,Truant et al., 2024)*. Other scholars have examined how DTs are applied in Life Cycle Assessment (LCA) studies to enhance the accuracy of environmental impact measurements *(Aryal et al., 2018; Sica et al., 2023; D'Eusanio & Petti, 2024)*. Moreover, recent studies have explored how digital tools like social media and corporate websites are used

for CE disclosures and stakeholder engagement *(L'Abate et al., 2023; L'Abate et al., 2024a; L'Abate et al., 2024b)*.

Furthermore, a growing current of studies have started to explore the role of DT in the KM context *(e.g., Stachová et al., 2020)*. Some researchers have investigated the integration of digital platforms into KM frameworks, in order to facilitate collaboration among firms, innovation, and the co-creation of circular solutions from an industrial symbiosis perspective *(e.g., Acerbi et al., 2020; De Marchi & Di Maria, 2020; Xiang & Yuan, 2024)*.

However, to the best of the authors knowledge, there still remains a paucity of studies on the integration of KM and DT for the CE transition. Starting from this background, this track proposal aims to stimulate the debate on this hot topic in order to explore how companies can leverage KM systems and DTs to overcome the barriers to CE adoption and create more sustainable, resilient business models. Additionally, the track aims to bridge the gap between theory and practice by providing insights into how businesses can implement these tools in real-world settings. By fostering interdisciplinary collaboration, this call for contributions will encourage research that addresses the complexities of circular transitions and the role of innovation in overcoming these challenges.

More in detail, the research topics explored by potential contributions to this track may cover, but are not restricted to, the following research questions:

- How can KM systems be designed to support businesses in transitioning to the CE?
- What role does DT play in facilitating the adoption of CE practices across industries?
- How can digital tools like big data analytics and blockchain be used to enhance transparency in CE disclosure?
- What are the challenges and opportunities in integrating DT with LCA methodologies?
- How can businesses effectively manage CE information and performance metrics using KM frameworks?
- What are the barriers to adopting DT in CE contexts, and how can they be overcome?
- How can digital platforms support the dissemination of CE knowledge across supply chains and sectors?

Keywords

circular economy; digital technologies; knowledge management

Organizers

Stefania Supino, San Raffaele University, Italy
Nicola Raimo, LUM University, Italy
Benedetta Esposito, Mercatorum University, Italy
Vitiana L'Abate, University of Sannio, Italy
Filippo Vitolla, LUM University, Italy

Knowledge Futures: AI, Technology, and the New Business Paradigm

www.ifkad.org

Guidelines

Researchers wishing to contribute are invited to submit an **EXTENDED ABSTRACT** (in editable format) of **min 500 and max 1000 words** not later than **31 JANUARY 2025**, using the submission procedure available on the website. The abstract should address theoretical background, research objective, methodology, and results in terms of expected contribution to Knowledge Management theory and practice. Authors are required to follow the guidelines for both extended abstracts as well as full papers available on IFKAD site: www.ifkad.org

Important dates

31 January 2025	*Extended Abstract submission deadline*
24 February 2025	*Acceptance notification to authors*
20 April 2025	*Early-Bird registration cut off*
02 May 2025	*Full paper submission deadline*
31 May 2025	*Registration deadline*
2-4 July 2025	*Conference sessions*

For further information

For any information related to the event, please see the event website at www.ifkad.org or contact the conference manager at info@ifkad.org